REMARKS

Claims

The Examiner withdrew claims 111-118 and 120. By this amendment, claims 111-118 and 120 have been cancelled and claims 122-132 have been added. Furthermore, claim 119 is currently amended. Therefore claims 119, 121-132 are pending in the application.

Claim Rejections — 35 U.S.C. §103

Claims 119 and 121 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dillon, JR et al (Dillon) US Patent No. 5,031,983 in view of Bischel et al (Bischel) US Patent No. 6,078,704. The rejections are respectfully traversed. Claim 119 has been amended to more clearly identify the subject matter applicant regards as the invention.

The main technical problem addressed by Dillon is linear birefringence. As a result the layers of Dillon's waveguide have been constructed to alleviate that problem. These layers, which include a substrate, a mode stripping layer, two low light layers and a guiding channel, are clearly structurally different to the present application e.g., compare Fig 3 of Dillon to Figs 2 and 3 of the present invention. Dillon does not disclose, suggest or teach a method of "... interacting with an affected wave component wherein an intensity of said wave component is varied responsive to said control signal". Dillon discloses at column 7, lines 34-38 "A magnetic field parallel to the propagation direction having sufficient strength to magnetically saturate the waveguide, is applied using, for example, a permanent bar magnet or an electromagnetic coil. A field strength of 30 Oe is typically used". Hence the structure disclosed in Dillon needs to be saturated to rotate a wave by a fixed amount of 133 degrees/cm (column 7 line 12) and no means of varying the degree of magnetisation is disclosed. Therefore to vary the rotation, it is necessary to vary the length of the structure--which is clearly not practical and could not be applied to a

display system.

To further distinguish the present application from Dillon, claim 119 has been amended from "having a waveguiding region and one or more guiding regions coupled to said waveguiding region" to "having a core and one or more cladding layers coupled to said core". This amendment is supported in the specification at least in paragraph 51. The waveguide of Dillon contains no bounding or cladding layers around the waveguide channel or core. Since Dillon's aim is to reduce linear birefringence, there is no benefit to the waveguide having such a structure. Furthermore, as the influencer (magnetic field generator) of the present application is integrated into one or more of the cladding layers, Dillon could never adopt the same structure.

The present invention is directed at being used in a display system, and as such the intensity of light needs to be varied, as would be required, for example, on a television, which is an application of the present invention. The device disclosed in Dillon does not have the sensitivity to be able to be used in such a display system. That is because Dillon lacks the ability to control an influencing magnetic field--other than on or off, whereas the present application can vary the magnetic field induced in the waveguide. Thus Dillon does not suggest or teach a method of "interacting with [a] wave component wherein an intensity of [the] wave component is varied responsive to [a] control signal" as recited in claim l 19 of the present invention.

The above differences between the present invention and Dillon arise primarily because Dillon is directed to solving a different technical problem, namely birefringence. A person skilled in the art would recognize these differences and would have no motivation to adapt the structure of Dillon to the structure of the present invention, because Dillon does not disclose varying the amount of rotation and therefore has no control over the intensity of light exiting the structure. The applicant also believes that a person skilled in the art would understand that varying the intensity of a signal implies more than just turning the signal on and off.

However, the examiner also combines the teachings of Dillon with Bischel, asserting that a non-inventive skilled addressee would be directed to combine these two references to reach the present invention. The applicant respectfully disagrees.

Bischel discloses a system of routing laser light among a set of optical waveguides. Bischel also discloses two methods of varying the intensity of a display. The first method is "to modulate the diode laser intensity by modulating the electrical current powering the diode laser" (column 89, lines 30-32). This is in stark contrast to the present invention as the intensity of the wave is varied at the source rather than varied in the transport mechanism of the wave.

The second method is "to fabricate an independent modulator (possibly in the substrate 1028) using modulator designs known to the art. An example of a standard modulator design is the Mach-Zehnder interferometric modulator." (column 90, lines 3-7) An interferometric modulator adjusts the intensity of light by causing constructive and destructive interference of light waves. In order to implement this method, two light waves are required to create constructive and destructive interference, which requires additional devices to be incorporated into the modulator design. Therefore, disclosure of such a device in Bischel does not teach or suggest the design of the present invention, which does not employ such constructive and destructive interference.

Although Bischel discloses methods of varying the light intensity directed towards video display units, it does not lead a person of ordinary skill in the art to be able to produce a system of the present invention, either in isolation or in combination with Dillon. Due to the difference in structures between the present invention, Dillon and Bischel, a person of ordinary skilled in the art would not be led to the present invention without inventive input. Specifically, the structures disclosed in Dillon and Bischel are planar, whereas the present invention is a tubular design. It would not be possible to introduce a magnetic field to the structures of Dillon and Bischel without affecting more than one beam, as the field is not contained and therefore would have no application as a display unit.

Independent claim 121 sets forth a display method which uses a second element for interacting with a wave component, "where an integrity of the wave component is varied responsive to said control signal". As discussed above neither Dillon nor Bischel, singularly or in combination, teach or suggest such a method.

Further, Bischel does not teach or suggest any features that may be added from Bischel to Dillon to arrive at the present invention, as set forth in independent claims 119 and 121. The Applicant respectfully submits that Bischel does no more than tell a person of ordinary skill in the art that it is possible to vary the intensity of a beam, much like the intensity of any display of any technology can be varied. Therefore applicant respectfully assert that the 35 U.S.C. §103(a) rejection is improper and must be withdrawn. New Claims 122 – 127 and claims 128 – 132 are dependent upon allowable claims 119 and 121, respectfully. Therefore, based on the arguments above, and based on their own merits, applicant respectfully asserts that claims 122 – 132 are also allowable.

In view of the above remarks, Applicant believes the pending application is now in condition for allowance.

Applicant believes that no fees are due, however, if any become required, the Commissioner is hereby authorized to charge any additional fees or credit any overpayments to Deposit Account 08-2789.

Respectfully submitted

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